

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES [H]:Hex, [D]:Decimal

Status	Second	Third	Description	ENA
[Hex]	[H] [D]	[H] [D]	(Transmitted by)	
8n	kk (kk)	vv (vv)	Note Off (Key off)	N
9n	kk (kk)	vv (vv)	Note On (Key on)	N
Bn	01 (01)	vv (vv)	Modulation (Modulation wheel)	C
Bn	cc (cc)	vv (vv)	Control Change(cc= 01-5F(95)) (P.C,A.P/S,E.P) *1	C
Cn	pp (pp)	-- (--)	Program Change (Program select)	P
En	bb (bb)	bb (bb)	Pitch Bender Change (Pitch Bender)	A

n : MIDI Channel 00(0) <= n <= 0F(15)

kk : note number 24(36)<=kk<=60(96)

vv : Value

P.C: Panel Control

A.P/S: Assignable Pedal/Switch

E.P: Expression Pedal

ENA = A : Always enabled

N : Enabled if note message is enabled in Global parameter.

C : Enabled if control change is enabled in Global parameter.

P : Enabled if program change is enabled in Global parameter.

*1 Assignable controller value for MIDI transmit

Panel controller

Panel controller	vv [HEX]
Drawbar1	00,10,20,30,40,50,60,70,7F
Drawbar2	00,10,20,30,40,50,60,70,7F
Rotary ON	00,7F
Rotary FAST	00,7F
Rotary STOP	00,7F
V/C Select	"V1":00, "C1":1A, "V2":33, "C2":4C, "V3":65, "C3":7F
V/C Upper	00,7F
V/C Lower	00,7F
Percussion ON	00,7F
Percussion Soft	00,7F
Percussion Fast	00,7F
Percussion 3rd	00,7F
Upper Drawbar Select	"Preset":00, "1":40, "2":7F
Lower Drawbar Select	00,40,7F
Expression	00-7F

DRAWBAR "0":00, "1":10, "2":20, "3":30, "4":40, "5":50, "6":60, "7":70, "8":7F

ON/OFF "OFF":00, "ON":7F

Pedal assignalbe function

Function	vv [HEX]
Hold	00,7F

Wheel Brake	00,7F	
AMP Gain	00-7F	
Reverb Level	00-7F	
+-----+		
ON/OFF	"OFF":00,"ON":7F	

1-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (DEVICE INQUIRY REPLY)

Byte[H]	Description	
F0	Exclusive Status	
7E	Non Realtime Message	
0g	MIDI Global Channel (DEVICE ID)	
06	INQUIRY MESSAGE	
02	IDENTITY REPLY	
42	KORG ID (MANUFACTURERS ID)	
5B	CX/BX Series ID (FAMILY CODE (LSB))	
00	(FAMILY CODE (MSB))	
01	BX-3 (MEMBER CODE (LSB))	
00	(MEMBER CODE (MSB))	
xx	(Minor Ver. (LSB))	
xx	(Minor Ver. (MSB))	
xx	(Major Ver. (LSB))	
xx	(Major Ver. (MSB))	
F7	END OF EXCLUSIVE	

1-3 SYSTEM EXCLUSIVE MESSAGES

Function ID	Description/Function	*2
[Hex]		
40	Å@PROGRAM PARAMETER DUMP	R,D
4C	Å@ALL PROGRAM PARAMETER DUMP	R,D
50	Å@ALL DATA(GLOBAL PROGRAM)DUMP	R,D
51	Å@GLOBAL DUMP	R,D
21	Å@WRITE COMPLETE	R
22	Å@WRITE ERROR	R
23	Å@DATA LOAD COMPLETE (ACK)	E
24	Å@DATA LOAD ERROR	E

*2 : Transmitted when

R : Request message is received.

D : Data dump is done by Global function.

E : Exclusive message is received.

2.RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES [H]:Hex, [D]:Decimal

Status	Second	Third	Description	ENA
[Hex]	[H] [D]	[H] [D]	(Used....)	
8n	kk (kk)	vv (vv)	Note Off (as Note off)	A
9n	kk (kk)	vv (vv)	Note On (as Note on)	A

Bn	01 (01)	vv (vv)	Modulation	(as Modulation)	C
Bn	cc (cc)	vv (vv)	Control Change (cc= 01-5F(95))		*3 C
Bn	78 (120)	00 (00)	All Sound Off	(as All Sound Off)	A
Bn	79 (121)	00 (00)	Reset All Controllers	(as Reset All Controllers)	A
Bn	7A (123)	00 (00)	Local Control Off	(as Local Control Off)	A
Bn	7A (123)	7F (127)	Local Control On	(as Local Control On)	A
Bn	7B (123)	00 (00)	All Note Off	(as All Note Off)	A
Cn	pp (pp)	-- --	Program Change	(for Program change)	P
En	bb (bb)	bb (bb)	Pitch Bender Change		A

n : MIDI Channel 0(0) <= n <= F(15)

vv : Value

kk : Note number 24(36) <= kk <= 60(96)

ENA = A : Always Enable

C : Enabled if control change is enabled in Global Parameter.

P : Enabled if program change is enabled in Global Parameter.

*3 Assignable controller value for MIDI receive

Panel controller

Panle Switch	vv [HEX]
Drawbar1	00,01-10,11-20,21-30,31-40,41-50,51-60,61-70,71-7F
Drawbar2	00,01-10,11-20,21-30,31-40,41-50,51-60,61-70,71-7F
Rotary ON	00-3F,40-7F
Rotary FAST	00-3F,40-7F
Rotary STOP	00-3F,40-7F
V/C Select	"V1":00-15, "C1":16-2A, "V2":2B-3F
	"C2":40-54, "V3":55-69, "C3":6A-7F
V/C Upper	00-3F,40-7F
V/C Lower	00-3F,40-7F
Percussion ON	00-3F,40-7F
Percussion Soft	00-3F,40-7F
Percussion Fast	00-3F,40-7F
Percussion 3rd	00-3F,40-7F
Upper Drawbar Select	"Preset":00-2B, "1":2C-57, "2":58-7F
Lower Drawbar Select	"Preset":00-2B, "1":2C-57, "2":58-7F
Expression	00-7F

Drawbar "0":00, "1":01-10, "2":11-20, "3":21-30, "4":31-40,

"5":41-50, "6":51-60, "7":61-70, "8":71-7F

ON/OFF "OFF":00-3F, "ON":40-7F

Pedal assignalbe function

Function	vv [HEX]
Hold	00-3F,40-7F
Wheel Brake	00-3F,40-7F
AMP Gain	00-7F
Reverb Level	00-7F

ON/OFF "OFF":00-3F "ON":40-7F

2-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUIRY MESSAGE REQUEST

Byte[H]	Description
F0	Exclusive Status
7E	Non Realtime Message
nn	MIDI Global Channel (Device ID)
06	General Information
01	Identity Request
F7	EOX

nn : MIDI Channel 0 <=nn<= 0F : Receive if Global Channel
nn = 7F : receive any Channel

2-3 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

MASTER VOLUME

Byte[H]	Description
F0	Exclusive Status
7F	Realtime Message
0g	DEVICE ID (Global Channel)
04	Device Control
01	Master Volume
vv	Value (LSB)
vv	Value (MSB)
F7	EOX

2-4 SYSTEM EXCLUSIVE MESSAGES

Function ID	Description/Function	No.
[Hex]		
0E	GLOBAL DUMP REQUEST	51
Å@ 0F	ALL DATA(GLOBAL PROGRAM)DUMP REQUEST	50
Å@ 11	PROGRAM WRITE REQUEST	21
10	PROGRAM PARAMETER DUMP REQUEST	40
Å@ 1C	ALL PROGRAM PARAMETER DUMP REQUEST	4C
40	Å@PROGRAM PARAMETER DUMP	23
4C	Å@ALL PROGRAM PARAMETER DUMP	23
50	Å@ALL DATA(GLOBAL PROGRAM)DUMP	23
51	Å@GLOBAL DUMP	23

Recognized when Global MIDI Rx SysEx Paramter is Enabled

No.:MIDI Out function number (Transmitted when the message has been received.)

3.MIDI EXCLUSIVE FORMAT (R:Receive, T:Transmit)

Program Parameter Dump Request R

Byte	Description
F0 42 3g 5B	EXCLUSIVE HEADER
10	Program Parameter Dump Request
F7	EOX

After receiving this message,transmit Function 40(Program Parameter Dump) or 24(Data Load Error).

Program Parameter Dump R/T

Byte	Description
F0 42 3g 5B	EXCLUSIVE HEADER
40	Program Parameter Dump
dd	data *4
:	:
F7	EOX

After receiving this message and data,transmit Function 23(Data Load Complete) or 24(Data Load Error).

All Program Parameter Dump Request R

Byte	Description
F0 42 3g 5B	EXCLUSIVE HEADER
1C	All Program Parameter Dump Request
00	
F7	EOX

After receiving this message,transmit Function 4C(All Program Parameter Dump) or 24(Data Load Error).

All Program Parameter Dump R

Byte	Description
F0 42 3g 5B	EXCLUSIVE HEADER
4C	All Program Parameter Dump
00	
dd	data *4
:	:
F7	EOX

After receiving this message and data, transmit Function 23(Data Load Complete) or 24(Data Load Error).

Global Dump Request R

Byte	Description
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F0 42 3g 5B	EXCLUSIVE HEADER	
0E	Global Dump Request Å@Å@Å@	
00		
F7	EOX	
+-----+-----+-----+		

After receiving this message, transmit Function 51(Global Dump) or 24(Data Load Error).

Global Dump		R/T
+-----+-----+-----+		
Byte	Description	
+-----+-----+-----+		
F0 42 3g 5B	EXCLUSIVE HEADER	
51	Global Dump	
00		
dd	data *4	
:	:	
F7	EOX	
+-----+-----+-----+		

After receiving this message, transmit Function 23(Data Load Complete) or 24(Data Load Error).

All Data(Global+Program)Dump Request		R
+-----+-----+-----+		
Byte	Description	
+-----+-----+-----+		
F0 42 3g 5B	EXCLUSIVE HEADER	
0F	All Data(Global+Program)Dump Request	
00		
F7	EOX	
+-----+-----+-----+		

After receiving this message, transmit Function 50(All Data Dump) or 24(Data Load Error).

All Data(Global Program)Dump		R/T
+-----+-----+-----+		
Byte	Description	
+-----+-----+-----+		
F0 42 3g 5B	EXCLUSIVE HEADER	
50	All Data(Global Program)Dump	
00		
dd	data *4	
:	:	
F7	EOX	
+-----+-----+-----+		

After receiving this message, transmit Function 23(Data Load Complete) or 24(Data Load Error).

Program Write Request		R
+-----+-----+-----+		
Byte	Description	
+-----+-----+-----+		
F0 42 3g 5B	EXCLUSIVE HEADER	
11	Program Write Request	
00		
pp	PROGRAM No.	
F7	EOX	
+-----+-----+-----+		

After receiving this message, transmit Function 21(Write Complete) or 22(Write Error).

Write Complete		T
Byte	Description	
F0 42 3g 5B	EXCLUSIVE HEADER	
21	Write Complete	
F7	EOX	

Transmit this message when writing via "Program Write Request" is completed.

Write Error		T
Byte	Description	
F0 42 3g 5B	EXCLUSIVE HEADER	
22	Write Error	
F7	EOX	

Transmit this message when writing via "Program Write Request" is not completed.

Data Load Complete		T
Byte	Description	
F0 42 3g 5B	EXCLUSIVE HEADER	
23	Data Load Complete	
F7	EOX	

Transmit this message when data loading is completed.

Data Load Error		T
Byte	Description	
F0 42 3g 5B	EXCLUSIVE HEADER	
24Å@	DATA LOAD ERROR	
F7	EOX	

Transmit this message when data loading is not completed.

*4 Dump data 8bit -> 7bit conversion

DATA (1set = 8bit x 7Byte)

b7	~	b0	b7	~	b0	b7	~	b0	b7	~	b0
+	+	+	+	+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+	+	+	+	+
7n+0			7n+1			7n+2 ~ 7n+6			7n+7		

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MIDI DATA ( lset = 7bit x 8Byte )
  b7b7b7b7b7b7b7b7      b6      ~      b0      b6 ~ ~      b0      b6      ~      b0
+--+--+--+--+--+--+--+  +--+--+--+--+--+--+--+  +--+--+~--+--+--+  +--+--+--+--+--+--+--+
|0| | | | | | | | |  |0| | | | | | | | |  |0| | | | | | | | |  |0| | | | | | | | |
+--+--+--+--+--+--+--+  +--+--+--+--+--+--+--+  +--+--+~--+--+--+  +--+--+--+--+--+--+--+
| | | | | | | | |      7n+0      7n+1 ~ ~ 7n+5      7n+6
| | | | | | | | |
| | | | | | | +- 7n+0 bit7
| | | | | +- 7n+1 bit7
| | | +- 7n+2 bit7
| | +- 7n+3 bit7
| +- 7n+4 bit7
| + 7n+5 bit7
+ 7n+6 bit7

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